

**ABSTRACT**

A preferred method for generating a transformer model includes defining a data base by selecting a first and a second set of parameters for inclusion in the data base, the first set of parameters being representative of at least one of as-designed and as-built transformer data, the second set of parameters being representative of transformer performance data. The preferred method also includes storing data from a plurality of transformers in the data base, the data from a plurality of transformers corresponding to the first and second sets of parameters. The preferred method further includes determining interrelationships between the first and second sets of parameters by analyzing the data from a plurality of transformers using multivariate statistical analysis.